UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

March 22, 2005

Via Certified Mail
Return Receipt Requested

SR-6J

Mr. Thomas Steib
Detrex Corporation
1100 N. State Road
Ashtabula, OH 44004

RE: U.S. EPA Technical Support Issues Concerning the Addition of Experimental Extraction Wells and Site O&M- Detrex Source Control Area - Fields Brook Superfund Site - Ashtabula, Ohio - Docket No. - V-W-98-C-450

Dear Mr. Steib:

U.S. EPA Region 5 staff and specialists from U.S. EPA's Ground Water Technical Support Center (GWTSC) in Ada, Oklahoma have reviewed Detrex's 11/12/04 responses to past comments, the 12/12/04 Update to the Operations and Maintenance Manual and the 12/28/04 Supplemental Pilot Study for the DNAPL Recovery System. Comments from the GWTSC are provided as an attachment to this letter. Comments for U.S. EPA Region 5 are, as follows:

Supplemental Pilot Study for the DNAPL Recovery System

The GWTSC recommends that one of the two test wells be placed in an area of moderate silting, so that a broader evaluation of the test wells can be conducted. Within 30 days of receipt of this letter, Detex should provide to U.S. EPA an updated map showing the proposed placement of the wells and an implementation plan for well installation. The implementation plan should be a brief document that includes a schedule, information regarding the contractor(s) and key personnel, and an updated Health and Safety Plan for the test well installation work.

Update to the Operations and Maintenance Manual

O&M monitoring at the Detrex Operable Unit should serve to demonstrate that the site groundwater and DNAPL are not potential sources of contamination to Fields Brook or its tributaries. Detrex needs to provide comprehensive analytical, water level and product thickness data showing the effectiveness of the slurry wall, the collection trenches and the DNAPL removal system. It is unclear how the proposed monitoring plan will pull together the information to show that the system is working to protect Fields Brook over the long- term through the

containment and removal of DNAPL and contaminated groundwater. The O&M Plan should be revised and resubmitted for U.S. EPA review within 30 days of Detrex's receipt of this letter.

Health and Safety

In addition to the preparation of a Health and Safety Plan for the installation of the test wells, Detrex must submit a revised Health and Safety Plan for O&M. This Health and Safety Plan must include a proper air monitoring and respiratory protection program for workers (especially for those who enter the pump houses where vapors accumulate). U.S. EPA may conduct another inspection of the site to verify that appropriate equipment is available, is in working order and is properly calibrated. All HASPs (and critical site documents) must be readily available at the site and personnel must be fully trained per OSHA requirements (with documentation of training on file for review). Because Detrex should already have an updated Health and Safety Plan for O&M on file, Detrex should submit a copy of the most recent HASP to U.S. EPA no later than 10 days after receipt of this letter.

Request to Modify Hours of Operation for the DNAPL Extraction System

In response to a downturn in business, Detrex has requested that U.S. EPA approve a reduction in the hours of operation for the DNAPL Extraction System. At this point in time U.S. EPA is denying the request to reduce the hours of operation. Without a clearly planned monitoring and implementation program, U.S. EPA does not have a good understanding of what progress is being made in the removal of DNAPL and what would be sacrificed by the reduced extraction time. Therefore, at this point in time, U.S. EPA does not think it appropriate to reduce extraction hours. In terms of the financial burden of operation, Detrex is responsible to implement the work identified under the Unilateral Administrative Order and has failed to demonstrate that fluctuations in business at the local facility warrant reduced work at the site when the corporation has the financial capability of performing the work.

If you have any questions concerning U.S. EPA comments and requirements, please do not hesitate to contact me at 312-353-6564.

Sincerely,

Terese A. Van Donsel
Remedial Project Manager

Attachment

cc: T. Short / EPA-R5
P. Felitti /EPA-R5

C. Maurice/EPA-R5
D. Burden / EPA-GWTSC
R. Williams / OEPA
R. Currie / Detrex
Site File - Fields Brook / Detrex

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NATIONAL RISK MANAGEMENT RESEARCH LABORATORY
GROUND WATER AND ECOSYSTEMS RESTORATION DIVISION
P.O. Box 1198 Ada,OK 74820

OFFICE OF
RESEARCH AND DEVELOPMENT

March 2, 2004

MEMORANDUM

SUBJECT: Review of the Fields Brook Supplemental Pilot Study DNAPL Recovery System Work Plan, and the Revisions to the Operations and Maintenance Manual (04-R05-001)

FROM: David S. Burden, Ph.D., Director /s/
U.S. EPA Ground Water Technical Support Center

TO: Terese Van Donsel, RPM
U.S. EPA Region 5

The following are review comments of the documents associated with the Field Brooks Superfund Site - Detrex Corporation Operable Unit, located in Ashtabula, OH. This review was performed in response to a request from EPA Region 5 to EPA's Ground Water Technical Support Center (GWTSC), located in Ada, OK. Specifically, the Region requested a review of the *Supplemental Pilot Study DNAPL Recovery System Work Plan* (the "Work Plan") and the revisions to the Operations and Maintenance Manual (the "Revisions"). The review was conducted under my oversight, by EPA's contractor to the GWTSC. Specifically, the site documents were reviewed by, Dr. Dan Pope of the Dynamac Corporation. I have carefully reviewed these comments and concur with them. If you have any questions or comments please contact me and I would be happy to arrange a conference call with myself and Dr. Pope.

DNAPL recovery operations at the Fields Brook site (the "Site") have been hampered by poor performance of the recovery system, including DNAPL pumping difficulties associated with silt and crystalline materials in the DNAPL.

General Comments

The reviewed documents present:

1) an evaluation of several pump types; the pumps are proposed to help solve the DNAPL recovery problems associated with silt, contaminant crystals, and short-circuiting of air in the recovery wells,

2) proposals for two new DNAPL recovery wells to be installed for testing the new DNAPL extraction pumps,

3) proposals for a monitoring network and sampling regime to monitor a downgradient vertical barrier wall, a ground-water collection trench upgradient of the barrier wall, and a ground-water collection trench beneath the DS tributary

4) proposals for a monitoring network and sampling regime to monitor the DNAPL plume.

Proposed DNAPL Recovery Pump Types

The "positive displacement piston pumps" proposed for DNAPL extraction, appear to be promising for helping to solve the DNAPL recovery problems, based on the description of pump characteristics. It seems appropriate to move to a field test of the new extraction pump and well system.

Proposed DNAPL Recovery Wells

The Work Plan indicates "In order to evaluate the effectiveness of the proposed extraction well design, the two wells will be installed in the general vicinity of existing wells where the greatest amount of silting has been observed." It might be better to locate one of the proposed wells where a moderate amount of silting has been observed, to get a more general view of the effectiveness of the new approach.

Proposed Monitoring Network and Sampling Regime – Barrier Wall/Trenches

There are several problems with the proposed monitoring system. It is not clear why the proposed "upgradient" wells (for monitoring the barrier wall and collection trenches) were chosen. It is not immediately obvious how the chosen well locations are related (from a monitoring standpoint) to the locations of the barrier wall or the collection trenches. A full explanation should be provided for why these locations were chosen. The explanation should include discussions of the ground water flow patterns and contaminant transport, with emphasis on the area of the site near the barrier and trenches. These discussions should be oriented to providing a reasoned explanation of the monitoring scheme (i.e., the three-dimensional location of the monitoring wells relative to the barrier/trenches). Although the chosen downgradient monitoring wells seem to be more obviously related to the barrier/trenches locations, it would be appropriate to provide a similar explanation for these wells also.

Figures and diagrams should be included to clarify the discussions; e.g., ground water elevation contour maps, geological cross-section maps showing the geological structure, barrier/trench locations, and well screen locations.

In addition, a full discussion of the goals of the monitoring program should be provided; e.g., what the monitoring program is supposed to achieve, and how the monitoring data will be used to make site-related decisions. The documents reviewed indicated only that "After five years of sampling, a review will be made of the results and the sampling program may be modified if results appear to be stable." It is unclear what "results" are intended, what "stability" means, what sampling program modifications may be under consideration, or how the decision to modify the sampling program will be made. For example:

1) "results" should be defined in terms of specific parameters to be measured and evaluated (contaminant dissolved concentrations, NAPL levels/sheens, ground-water elevations/flow patterns, etc.),

2) "stability" should be defined in terms of the measured parameters, with appropriate statistical tests to assess stability (e.g., no change, or perhaps a consistent declining trend in contaminant concentrations, based on the Mann-Kendall trends test), and

3) "modifications" should be defined in terms of a list and decision tree of alternative decisions/actions to be made/taken based on the evaluated results of monitoring (e.g., if a trends test shows that the contaminant concentrations in the wells are increasing, new monitoring wells and extraction wells will be installed to monitor plume expansion, and enhance source removal).

Proposed Monitoring Network and Sampling Regime – DNAPL Plume

The purpose of the DNAPL plume monitoring is not clear. The documents reviewed indicate "Select wells will be monitored to evaluate the southern and western edges of the DNAPL plume." Only three wells are to be monitored, and they appear to be far away from the DNAPL plume, according to Figure 5 of the Revisions. One of the specified wells (DETMW02S) appears to be 400+ feet away from the indicated extent of the DNAPL plume. There is no discussion of what the "evaluation" will involve. If DNAPL plume expansion is to be monitored, it seems more appropriate to place several monitoring wells closer to the plume boundaries. In addition, there is no discussion of why only the southern and western plume edges are to be monitored. Concerning decisions to be made based on the monitoring, the documents reviewed indicated only that "After five years of sampling, a review will be made of the results and the sampling program may be modified if results appear to be stable."

The recommendations for the proposed Monitoring Network and Sampling Regime – DNAPL Plume are similar to the recommendations for the proposed Monitoring Network and Sampling Regime – Barrier Wall/Trenches. A full explanation should be provided for why the monitoring well locations were chosen, including discussions of DNAPL transport and the ground water flow patterns. Figures and diagrams should be included to clarify the discussions; e.g., ground water elevation contour maps, geological cross-section maps showing the geological structure, DNAPL plume configuration and behavior, and well screen locations.

A full discussion of the goals of the monitoring program should be provided; e.g., what the monitoring program is supposed to achieve, and how the monitoring data will be used to make site-related decisions. Terms (results, stability, modifications, etc.) should be defined. The possible range of alternative decisions based on the monitoring data should be listed and discussed, and a decision tree showing how the decisions will be made based on the data should be provided.

Specific Comments

Page 2-1 Revisions

2.1 System Description

"System modifications are currently being evaluated due to continuing problems of excess silt, collapsing wells, and short circuiting of compressed air in wells."

Apparently, there is still some confusion over the "collapsing wells" problem. Previous Site documents had indicated there were no collapsing wells.

cc: Rich Steimle, (5102G)
Larry Zaragoza, (5204G)
Luanne Vanderpool, EPA Region 5 (SR-6J)
David Wilson, EPA Region 5 (SR-6J)
Charles Maurice, EPA Region 5 (SR-4J)